

GEOGRAPHIC INFORMATION SCIENCE

Department Website: <http://geography.uchicago.edu>

PROGRAM OF STUDY

Spatial thinking deals with the fundamental role of space, place, location, distance, and interaction—crucial to tackling many research questions in the social and physical sciences. The minor in geographic information science provides a coherent exposure to rigorous spatial thinking and its expression through the theories and methods of geographic information science.

Geographic information science covers all aspects pertaining to accessing, storing, transforming, manipulating, visualizing, exploring, and reasoning about information where the locational component is important (spatial data). This includes the technical and computational aspects of geographic information systems, the methodologies of spatial analysis and spatial statistics, mapping, and geo-visualization, as well as societal aspects related to the use of geographic data.

The minor serves as a complement to other majors, such as computer science, statistics, economics, public policy studies, sociology, anthropology, political science, or environmental and urban studies, but would also be of value to majors in the humanities and physical sciences interested in the spatial aspects of their field.

PROGRAM REQUIREMENTS FOR THE MINOR

The minor consists of six core courses and one elective from a series of offerings. The core courses provide a coherent exposure to rigorous spatial thinking and its incorporation into the methodologies of geographic information systems, spatial analysis, and spatial data science.

The electives consist of courses that touch upon various aspects of spatial thinking, with different degrees of technical materials, and are intended to either act as “gateways” into the minor or to provide the opportunity for the application of spatial analysis in a range of fields.

The sequencing of courses is designed such that students can complete all requirements for the minor in one year of study (provided the statistics prerequisite has been taken prior).

The capstone course for the minor is GISC 2840 GIScience Practicum, which may be taken concurrently with GISC 28300 Geographic Information Science III. Students will develop a multifaceted GIS project incorporating spatial thinking in design, infrastructure, and implementation. Projects could include the development of a web application, dynamic dashboard, interactive storytelling map, infographic-driven policy brief, or research article, and can be carried out in conjunction with a thesis requirement of the student’s major.

SUMMARY OF REQUIREMENTS: MINOR IN GEOGRAPHIC INFORMATION SCIENCE

STAT 22000	Statistical Methods and Applications (or equivalent) *	100
GISC 28100	Geographic Information Science I	100
SOCI 20253	Introduction to Spatial Data Science	100
GISC 28200	Geographic Information Science II	100
GISC 28300	Geographic Information Science III	100
GISC 28400	GIScience Practicum	100
Any elective from the list of courses below		100
Total Units		700

* Students who take STAT 22000 or an equivalent course to satisfy a requirement in a major will complete a six course minor. Students who take STAT 22000 to satisfy only the GIS minor will complete a seven course minor.

ELECTIVE OPTIONS FOR THE MINOR IN GEOGRAPHIC INFORMATION SCIENCE

One of the following courses may be taken to fulfill the elective course option for the minor in geographic information science.

ENST 24600	Introduction to Urban Sciences	100
ENST 26006	Sustainable Cities Lab	100
ENST 27155	Urban Design with Nature	100
GEOG 28900	Readings in Urban Planning and Design	100
SOCI 20273	Urban Spatial Archaeology I	100
SOCI 20519	Spatial Cluster Analysis	100

Note: many GEOG courses are also cross-listed with SOCI and ENST.

ADVISING AND GRADING

Courses in the minor may not be double counted with the student's major(s), other minors, or general education requirements.

Courses in the minor must be taken for quality grades, and more than half of the requirements for the minor must be met by registering for courses bearing University of Chicago course numbers.

Students who elect the minor must confer with the program director before the end of Spring Quarter of their third year to declare their intention to complete the minor. The director's approval for the minor program should be submitted to the student's College adviser by the deadline above using the Consent to Complete a Minor Program (https://humanities-web.s3.us-east-2.amazonaws.com/college-prod/s3fs-public/documents/Consent_Minor_Program.pdf) form.

Students may petition the program director to have a course counted as an elective that is not included on the current list of electives.

GEOGRAPHICAL SCIENCES MAJOR

Starting in 2022–23, the Geographical Sciences major and associated courses (GEOG) will be embedded with the Environmental and Urban Studies (ENST) major and minor program. Students interested in the previous Geographical Sciences major are encouraged to declare the ENST major.

